

The genus *Amaracarpus* Blume (Rubiaceae) in mainland Australia

Paul I. Forster

Summary

Forster, P.I. (2010). The genus *Amaracarpus* Blume (Rubiaceae) in mainland Australia. *Austrobaileya* **8(2)**: 155–158. The genus *Amaracarpus* Blume is represented in mainland Australia by a single, non-endemic species in the Wet Tropics bioregion of north-east Queensland. The new combination *Amaracarpus nematopodus* (F.Muell.) P.I.Forst. is made based on *Psychotria nematopoda* F.Muell. and represents an earlier name for the species previously known as *A. heteropus* Valetton. Illustrations based on Australian material are provided, together with notes on variation, distribution, habitat and conservation status.

Key Words: Rubiaceae, *Amaracarpus*, *Amaracarpus heteropus*, *Amaracarpus nematopodus*, *Psychotria nematopoda*, Australia flora, New Guinea flora, Queensland flora, taxonomy, nomenclature, new combination

Queensland Herbarium, Department of Environment & Resource Management, Brisbane Botanic Gardens, Mt Coot-tha Road, Toowong, Queensland 4066, Australia. Email: paul.forster@derm.qld.gov.au

Introduction

Amaracarpus Blume was revised by Davis & Bridson (2004) who recognised 22 species distributed widely in south-east Asia, Malesia (Java, Moluccas, New Guinea, Philippines), Christmas Island, Seychelles and Melanesia (Solomon Islands). The majority of species (20) are native to the island of New Guinea where they occur in a wide range of rainforest habitats on diverse substrates. *Amaracarpus* is closely allied to genera such as *Calycosia* A.Gray, *Dolianthus* C.H.Wright, *Hydnophytum* Jack, *Psychotria* L. and *Straussia* A.Gray (Andersson 2002; Davis & Bridson 2004); but may be defined by a combination of vegetative and floral characters outlined in detail by the latter authors.

Davis & Bridson (2004: 53) recorded *Amaracarpus heteropus* Valetton as occurring widely in New Guinea, but also in north Queensland based on a single collection (Schodde 3306). Recognition of *Amaracarpus* as a genus that occurs in mainland Australia has otherwise been ignored until the current paper where the application of the name *A. heteropus* is resolved in relation to the cited collection and others that are conspecific with

it. A second species (*A. pubescens* Blume subsp. *pubescens*) occurs in Australia on Christmas Island (Du Puy 1993; Davis & Bridson 2004) but is not considered further here.

The collection Schodde 3306 (BRI duplicate) had been previously determined by Sally Reynolds on the 17th May 1991 as *Psychotria nematopoda* F.Muell. based upon her examination of the type of that species name held at the National Herbarium of Victoria (MEL). Consequently collections of this species held at the Queensland Herbarium have been identified under that name, prior to a revision of the Australian species of *Psychotria sens. lat.* being completed. The type of *P. nematopoda* belongs to the genus *Amaracarpus* and is conspecific with the taxon delimited as *A. heteropus* by Davis & Bridson (2004). As *Psychotria nematopoda* is an earlier name, hence prior specific epithet, a new combination is provided in *Amaracarpus*. An adequate morphological description for this species can be sourced in Davis & Bridson (2004).

Materials and methods

The materials discussed and illustrated in this paper are held at the herbaria BRI, CANB, CNS and MEL and includes material collected

in habitat by the author. Abbreviations in the specimen citations are: N.P. (National Park); L.A. (Logging Area); S.F./S.F.R. (State Forest/State Forest Reserve); T.R. (Timber Reserve).

Taxonomy

Amaracarpus nematopodus (F.Muell.) P.I.Forst. **comb. nov.**; *Psychotria nematopoda* F.Muell., *Fragm.* 7: 49 (Oct 1869); *Uragoga nematopoda* (F.Muell.) Kuntze, *Revis. Gen. Pl.* 2: 961 (1891). **Type:** Queensland. NORTH KENNEDY DISTRICT: Mackay River [now Tully River], 15 October 1867, *J.Dallachy s.n.* (holo: MEL1583760).

Amaracarpus heteropus Valetton, *Nova Guinea* 8(4): 769 (1912), **syn. nov.** **Type:** Indonesia. WEST PAPUA: Tami-river, 8 July 1910, *K.Gjellerup* 264 (lectotype: L; isolecto: BO, L; *fide* Davis & Bridson 2004: 50).

Amaracarpus longifolius Valetton, *Nova Guinea* 8(4): 770 (1912), **syn. nov.**, **nom. illeg.** non Elmer. **Type:** Indonesia. WEST PAPUA: Augusta River, 5 October 1910, *K.Gjellerup* 327 (lecto: BO; isolecto: BO, L; *fide* Davis & Bridson 2004: 50).

Amaracarpus lanceolatus Valetton, *Bot. Jahrb. Syst.* 61: 115 (1927), **syn. nov.** **Type:** Indonesia. WEST PAPUA: “reg. flum. Mamberamo, Prauwenbivak”, 6 September 1920, *H.J.Lam* 1084 (lecto: L; isolecto: L, U [photo!]; *fide* Davis & Bridson 2004: 50).

Amaracarpus corymbosus Valetton, *Bot. Jahrb. Syst.* 61: 115 (1927), **syn. nov.** **Type:** Indonesia. WEST PAPUA: “Nova Guinea neerlandica meridionalis”, 20 June 1914, *W.K.H.Feuilletau de Bruyn* 47 (lecto: BO; isolecto: K, L; *fide* Davis & Bridson 2004: 50).

Amaracarpus urophyllus Merr. & L.M.Perry, *J. Arnold Arbor.* 17: 221 (1946), **syn. nov.** **Type:** Papua New Guinea. CENTRAL PROVINCE: Mt Tafa, September 1933, *L.J.Brass* 4998 (holo: A n.v.; iso: BRI; NY [photo!]).

Illustrations: Cooper & Cooper (2004: 450, as *Psychotria nematopoda*); Davis & Bridson (2004: 51, 52).

Additional selected specimens examined (*cited by Davis & Bridson [2004]): Indonesia. WEST PAPUA. Rouffaer River, Aug 1926, **Docters van Leeuwen* 9718

(BRI); Cycloop Mountains, southern slope of Makanoi Range, camp site above Kotanica, Jul 1961, **van Royen* 6204 & *Sleumer* (BRI). **Papua New Guinea.** MILNE BAY PROVINCE: track between Ailuluai & Agamoia, S. Fergusson Island, Nov 1976, **Croft et al.* LAE68624 (BRI). **Queensland.** COOK DISTRICT: Home Rule, base of Mt Hedley, 3 km E of Rossville, Apr 1999, *Forster* PIF24254 & *Booth* (A, BRI, CNS, MEL); Home Rule Lodge, Wallaby Creek, Jun 1996, *Jago* 4018 (BRI); T.R. 165, near Home Rule, Wallaby Creek, Jun 2005, *Forster* PIF30985 & *Jensen* (BRI, CNS, MEL); Parrot Creek, 1973, *Dick sub Webb & Tracey* 13539 (CNS); 9.6 km S of Rossville, near highest point of the Gap on Wujal Wujal Road, Dec 1989, *Jessup* GJD3088 *et al.* (BRI); Gap Creek, c. 22 miles [37 km] S by E of Cooktown, May 1969, *Smith s.n.* (BRI [AQ339996]); 0.5 miles [0.8 km] W of Cedar Bay, Bloomfield River area, May 1969, *Webb & Tracey* 8959 (BRI); near summit of Mt Misery, Dec 1989, *Jessup* GJD3145 *et al.* (BRI); Oliver Creek, a tributary of Noah Creek, Cape Tribulation, May 1972, *Webb & Tracey* 11572 (CANB, CNS); Mossman, Aug 1948, *Smith* 3938 (BRI); S.F.R. 141, headwaters of Little Mossman River, off Mt Perserverence road, Feb 2003, *Ford* AF3820 (BRI, CNS); Churchill Creek, Churchill L.A., S.F. 143, Jul 1995, *Forster* PIF17202 & *Figg* (BRI); Danbulla S.F.R., c. 15 miles [25 km] E of Tinaroo, Aug 1963, **Schodde* 3306 (BRI, CANB); 12 km NE of Yungaburra, Scientific Area 30, E end of Severin L.A., S.F. 185, Oct 1988, *Jessup* GJM5220 (BRI); Gadgarra S.F., vicinity of Gadgarra Red Cedar, Nov 1994, *Hunter* JH1314 (BRI); ridgeline with view to West Mulgrave Falls, Jan 1995, *Hunter* JH275 (BRI); West Mulgrave River, Apr 1995, *Hunter* JH3265 (BRI); Malanda, Jan 1918, *White s.n.* (BRI [AQ125333]); Elinjia L.A., 7.4 km NE of Millaa Millaa, Oct 1988, *Jessup* GJM5227 (BRI); Henrietta Creek, Tchupalla Falls, Palmerston N.P., Jun 1997, *Forster* PIF21250 (BRI, CNS); Russell River, lower mid-reaches, Jan 1995, *Hunter* JH2129 (BRI); Miriwinni near Mt Bartle Frere, 1962, *Webb & Tracey* 66774 (BRI). NORTH KENNEDY DISTRICT: Nitchaga Road, S.F.605, S of Koombooloomba, Jan 2004, *McDonald* KRM1709 *et al.* (BRI); S.F.R. 344, Kirrama Road, 2 km NNW of Mt Collins, Jun 2002, *Ford* AF3477 (BRI, CNS).

Distribution and habitat: The Australian populations of *Amaracarpus nematopodus* are wholly within the Wet Tropics bioregion of north-east Queensland with a northern limit at Home Rule and a southern limit at the Kirrama Range. Plants occur in the understorey of wetter rainforests (complex notophyll to mesophyll vineforests) on diverse substrates (often alluvial/colluvial in origin), e.g. basalt, chert, granite, metamorphics, mudstone, at altitudes between 10 and 1100 m.

Notes: The definition of *Amaracarpus heteropus* by Davis & Bridson (2004) covers some diverse material from a wide range of localities and habitats in New Guinea, albeit all from coastal localities (altitudes 10–780 m), often in swamps or along watercourses.



Fig. 1. *Amaracarpus nematopodus*. A. branchlet $\times 0.5$. B. abaxial leaf surface showing 1–3° venation $\times 1$. C. node with stipule $\times 3$. D. inflorescence with flower $\times 6$. E. face view of flower showing style head and 4 stamens $\times 8$. F. side view of flower with corolla lobes cutaway showing style with stigmas and two stamens $\times 8$. G. inflorescence with fruit showing persistent subtending bracts $\times 6$. H. apical view of fruit $\times 8$. I. vertical cross-section of fruit showing carpology $\times 6$. All from Forster PIF25254 & Booth (BRI). Del. W.Smith.

Their defining features for this species are the stipules with 2 setae, the leaf lamina greater than 2 cm (usually more than 4.5 cm) long and with 8–10 pairs of secondary lateral veins; and the inflorescences pedunculate, (1–)3–7(–8)-flowered. This species is most similar to *A. attenuatus* Merr. & L.M.Perry; however, that species has deeply bifid stipules and leaf lamina with 10–14 pairs of secondary lateral veins. They included the two species in different species subgroups (that they openly admit are probably artificial) based solely on the stipule difference.

Amaracarpus nematopodus is likely to be confused with Australian species of *Psychotria*; however, it can be distinguished by the leaves arranged in the same plane as the branches, the monopodial shoot growth pattern, stipules with two setae (Davis & Bridson 2004) and the red fruit (versus cream, yellow or white) as first described by Bailey (1900: 771).

Conservation status: *Amaracarpus nematopodus* is widespread throughout the Wet Tropics of Queensland and usually common where it occurs. The majority of extant populations are in the conservation reserve estate (State Forests, Forest Reserves, National Parks) and the species should be considered as **Least Concern** in terms of Queensland legislation.

References

- ANDERSSON, L. (2002). Relationships and generic circumscription in the *Psychotria* complex (Rubiaceae: *Psychotrieae*). *Systematics & Geography of Plants* 72: 167–202.
- BAILEY, F.M. (1900). Rubiaceae. In *Queensland Flora* 3: 771. H.J.Diddams & Co.: Brisbane.
- COOPER, W. & COOPER, W.T. (2004). *Fruits of the Australian Tropical Rainforest*. Nokomis Editions: Melbourne.
- DAVIS, A.P. & BRIDSON, D.M. (2004). A taxonomic revision of the genus *Amaracarpus* (Rubiaceae, *Psychotrieae*). *Blumea* 49: 25–68.
- DU PUY, D.J. (1993). Rubiaceae [Christmas Island]. In H.J.Hewson & H.S.Thompson (eds.), *Flora of Australia* 50: 392–405. Australian Government Publishing Service: Canberra.